

**BEFORE  
THE PUBLIC SERVICE COMMISSION OF  
SOUTH CAROLINA**

**DOCKET NO. 2019-184-E**

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South Carolina Energy Freedom Act	)	
(H.3659) Proceeding to Establish Dominion	)	
Energy South Carolina, Inc.'s Standard Offer	)	
Avoided Cost Methodologies, Form Contract	)	
Power Purchase Agreements, Commitment to	)	Docket No. 2019-184-E
Sell Forms, and Any Other Terms or	)	
Conditions Necessary (Includes Small Power	)	
Producers as Defined in 16 United States	)	
Code 796, as Amended) – S.C. Code Ann.	)	
Section 58-41-20(A)	)	

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**JOINT PREHEARING BRIEF OF SOUTH CAROLINA SOLAR BUSINESS ALLIANCE  
AND JOHNSON DEVELOPMENT ASSOCIATES**

COME NOW Intervenors the South Carolina Solar Business Alliance (“SCSBA”) and Johnson Development Associates (“JDA,” and together with SCSBA, “Intervenors”), pursuant to the Hearing Examiner Directive issued in these consolidated dockets on September 19, 2019 (Order No. 2019-107-H), and file this Prehearing Brief.

**I. STATEMENT OF THE CASE**

**A. INTRODUCTION**

South Carolina Act No. 62 of 2019 (“Act 62” or “The Act”) is a comprehensive energy policy intended to advance the responsible development of renewable energy in South Carolina in a way that protects and benefits ratepayers, increases consumer choice, injects additional competition into the state’s monopsony energy market, and promotes the state’s policy of encouraging renewable energy. The Act prioritizes transparency within regulatory proceedings and requires that Commission decisions not discriminate against small power producers (“SPPs”).

The setting of avoided cost rates, as well as the terms and conditions that govern contractual obligations between utilities and SPPs, represents the foundation upon which large-scale solar must compete for market share against South Carolina's vertically-integrated monopoly utilities. The development of large-scale solar facilities is a capital and time intensive business that relies on fair and balanced treatment within the regulatory arena in order to achieve success and meet the goals of Act 62.

Although ignored by Dominion Energy South Carolina ("DESC" or "The Company") in testimony, there exist substantial incentives for the Company to advocate for avoided cost rates, terms, and conditions that undermine competition from SPPs. DESC's capital bias, which serves the interest of shareholders rather than ratepayers, should be squarely recognized and considered by this Commission in its deliberations in these proceedings. Although DESC dedicates considerable testimony to describing hypothetical risks to customers from SPPs, it should be remembered that the Company's primary responsibility is to its shareholders, while this Commission is tasked with ensuring the best interests of DESC's customers are being met. To that end, the SCSBA has provided this Commission with a credible analysis of DESC's proposals in this docket and is requesting that the just and reasonable conclusions of that analysis be adopted in furtherance of the requirements and goals of Act 62.

Given the multitude of issues before this Commission, it is critical to consider the cumulative impact of even small deviations from the just and reasonable, fair and balanced, and non-discriminatory requirements of Act 62. While any individual flaw or biased assumption in the Company's proposal might seem relatively inconsequential in isolation, certainly the net negative impact of the many flaws and biases in the Company's proposal are exceedingly problematic for solar development in South Carolina. Indeed, the consequences of adopting DESC's proposed

avoided cost rates, terms, and conditions would result in a virtual, if not total, elimination of large-scale solar development in the state. This result would frustrate the intent of the General Assembly when enacting Act 62, while also depriving DESC's customers of the myriad benefits that accompany solar energy development.

Consistent with the language and intent of Act 62, this Commission should adopt just and reasonable rates, terms, and conditions that serve to "promote the state's policy of encouraging renewable energy." DESC's artificially low avoided cost rates, inflated integration cost analysis, and commercially unreasonable contractual terms and conditions fail to satisfy the statutory requirements pertinent to this proceeding. Therefore, it is incumbent on this Commission to fairly deliberate on the credibility of the alternative analyses presented by intervening parties like SCSBA and determine whether those alternative analyses serve to advance the goals of Act 62, rather than undermine them as DESC's proposal would have this Commission do.

The responsible development of solar energy in South Carolina advances consumer preference, increases consumer choice, shields ratepayers from the inherent risks associated with utility-owned generation and investments, promotes local economic development, and furthers the goals of Act 62. Ultimately, the decisions made by this Commission in these proceedings will determine in large part whether or not these attributes of solar energy will materialize for the benefit of South Carolina.

## **B. Act 62 and PURPA**

### **1. Act 62**

Act 62 made substantial reforms to South Carolina's implementation of PURPA as well as other aspects of the state's energy policy. Act 62 is essentially a reset of utility regulation as it pertains to a range of issues related to the expansion of renewable energy generation and utility

resource planning, and it provides this Commission with both increased direction and discretion in determining the most appropriate path forward for energy development in South Carolina. The Act makes clear that, in promoting South Carolina's policy of encouraging renewable energy, this Commission is directed to address all renewable energy issues in a fair and balanced manner that considers costs and benefits to all customers and establishes just and reasonable rates that reflect changes in the utility industry as a whole. Act 62 also recognizes and prioritizes increased competition and consumer choice within the state's electricity marketplace.

The primary issues covered in the Act include avoided cost methodologies, commercially reasonable contract terms and conditions, customer-sited generation, integrated resource planning, interconnection, community solar, commercial and industrial access to clean energy, integration of renewable energy, rate design, consumer protection, and increased Commission scrutiny of proposals for the construction of new major utility facilities. In implementing all aspects of the statute, the Commission "is directed to address all renewable energy issues in a fair and balanced manner, considering the costs and benefits to all customers of all programs and tariffs that relate to renewable energy and energy storage." S.C. Code Ann. § 58-41-05.

Key to this proceeding, the Commission is required by Act 62 to "open a docket for the purpose of establishing each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary to implement this section." S.C. Code Ann. § 58-41-20(A). Any decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA and the Federal Energy Regulatory Commission's implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public. *Id.*

The Commission is also directed to “treat small power producers on a fair and equal footing with electrical utility-owned resources” by ensuring that:

- (1) Rates for the purchase of energy and capacity fully and accurately reflect the electrical utility's avoided costs;
- (2) Power purchase agreements (“PPAs”) approved by the Commission are commercially reasonable and consistent with regulations and orders promulgated by the Federal Energy Regulatory Commission (“FERC”) implementing PURPA; and
- (3) Each electrical utility’s avoided cost methodology fairly accounts for costs avoided by the electrical utility or incurred by the electrical utility, including, but not limited to, energy, capacity, and ancillary services provided by or consumed by small power producers including those utilizing energy storage equipment.

*Id.*

Act 62 was also intended to ensure that the Commission would be equipped to conduct a critical analysis of the utilities’ avoided cost proposals, by requiring it to engage a third-party consultant or expert to conduct an independent analysis of those proposals and submit a report containing its independently-derived conclusions. This report is intended to be used by the commission along with all other evidence to inform its ultimate decision. S.C. Code Ann. § 58-41-20(I).

Finally, the legislature evidenced its concern with the transparency and reviewability of the utilities’ avoided cost calculations, by requiring that “each electrical utility’s avoided cost filing must be reasonably transparent so that underlying assumptions, data, and results can be

independently reviewed and verified by the parties and the commission.” S.C. Code Ann. § 58-41-20(J).

## 2. PURPA

The Public Utility Regulatory Policies Act, 16 U.S.C. § 824a-3 et seq. (“PURPA”) was enacted by Congress in 1978 and was amended most recently in 2005. PURPA’s principal goals included controlling power generation costs and ensuring long-term economic growth by reducing the nation’s reliance on oil and gas. *Freehold Cogeneration Associates v. Board of Regulatory Commissioners of New Jersey*, 44 F.3d 1178 (3d Cir. 1995) Another key aim of the statute is to diversify the nation’s electric energy supply by requiring electric utilities to purchase the output of small (i.e., less than 80 MW) independently owned alternative energy projects (referred to as “Qualifying Facilities” or “QFs”) at the cost the utility would otherwise incur to generate power itself or purchase it from other sources – referred to as the utility’s “avoided cost.” PURPA was also intended to increase competition from independent power producers by reducing both fuel price risk and the cost of power.<sup>1</sup> Congress required FERC to establish broad guidance regarding the implementation of PURPA, which it has done through rulemaking and numerous orders, but left many of the details of PURPA implementation to the states, subject to compliance with FERC’s directives.

There are several aspects of PURPA that are particularly relevant to this proceeding. First, the avoided cost construct was intended by Congress to leave ratepayers indifferent, from the standpoint of rates, whether the utility purchased power from QFs or procured it elsewhere. However, Congress specifically concluded that it was in the interest of utility ratepayers and the American public to promote QF development and diversify the generation portfolios of U.S.

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<sup>1</sup> See, e.g., Public Utility Regulatory Policies Act, Joint Explanatory Statement of the Committee of Conference at 98, Report No. 95-1750 (Oct. 10, 1978).

utilities. Since all development of capital-intensive electric generation facilities, including that by investor-owned utilities, requires certainty as to cost-recovery over a commercially reasonable period of time, “ratepayer indifference” in the context of PURPA’s goal of promoting QF development does not, and cannot, mean zero risk to ratepayers – any more than that is the standard with respect to utility self-built facilities. Rather, just as the General Assembly recognized in Act 62, it falls to state commissions such as this one to strike a reasonable balance between promoting QF development and protecting ratepayer interests.

Second, based on its view that smaller QFs would have a particularly difficult time negotiating with large monopoly utilities, FERC has required state commissions to adopt pre-approved avoided cost rates for QFs with a capacity of 100 kW or less – referred to as the “standard offer” – and has given states the authority to extend the standard offer to larger QFs. 18 C.F.R. § 292.304(c). States also may establish standard PPA terms and conditions for any size QF.

Third, also out of a concern about utility bargaining power and potential recalcitrance, FERC has provided that a QF, in the absence of a formal contract, may obligate a utility to purchase its power at the current avoided cost rate by unequivocally committing itself to sell that output to the utility, thereby establishing a Legally Enforceable Obligation (“LEO”) to sell power to the utility, and for the utility to purchase that power. 18 C.F.R. § 292.304(d); *JD Wind 1, LLC*, 130 FERC ¶ 61,127, 61,631 (2010). Although states have considerable latitude in dictating the requirements to establish a LEO, they must observe certain minimum requirements established by FERC, and also cannot impose unreasonable obstacles on the formation of a LEO.

Finally, FERC understood that having the ability to obtain financing was critical to development of QF projects. Based on the understanding that reasonable certainty about long-term revenues was critical to obtaining financing, FERC provided in its regulations that QFs are

entitled to enter into long-term contracts for the sale of energy and capacity at rates calculated at the time the contract or other legally enforceable obligation is incurred. 18 C.F.R. § 292.304(d). FERC has also ruled that PURPA PPAs must be of sufficient length to give the QF “reasonable opportunities to attract capital” for its project. *Windham Solar LLC & Allco Fin. Ltd.*, 157 FERC ¶ 61,134 at ¶ 8 (2016).

Intervenors submit that “reasonable opportunities to attract capital” means that a QF must be able to obtain regularly-available, market-rate financing for the costs of developing, building, and operating their projects. This requires the Commission to consider types, terms, and providers of financing for QFs that are wholly different from the preferential financing that the utility enjoys by virtue of its monopoly status, history, and ability to rate-base the entirety of the cost of its generation facilities.<sup>2</sup> QF financing must not depend on a special program of the financing parties, the presence of a credit enhancement not broadly available, or other special circumstances. The terms and conditions of the QFs’ PPAs also must meet standard underwriting criteria within the mainstream capital markets.

### **C. The Obligation to Reduce Ratepayer Risk under Act 62**

A primary policy objective of Act 62 is to benefit the customers of South Carolina utilities. Among other things, Act 62 requires that in setting avoided cost rates, the Commission must “strive to reduce the risk placed on the using and consuming public.” S.C. Code Ann. 58-41-20(A). Act 62 also requires that the Commission’s decisions be just and reasonable, in the public interest, consistent with PURPA and FERC orders and regulations, and “treat small power producers on a fair and equal footing with electrical utility-owned resources.”

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<sup>2</sup> Rebecca Chilton Direct Testimony at 4-5.

DESC interprets this language referencing “risk” to refer solely to the risk that the avoided cost rates will be inaccurately calculated and lead to ratepayers “improperly subsidizing” QF projects.<sup>3</sup> Intervenor agree that under PURPA ratepayers should be (in the short term) “economically indifferent to purchases of QF power instead of the cost to construct and operate additions to utility power plant.”<sup>4</sup> But the risk of such “improper subsidies” is resolved by *accurate* calculations of avoided cost rates.

But the ratepayer protection language of Act 62 must mean something beyond simply preventing inaccurate avoided cost calculations. The statute is not exhaustive or limiting in describing the kinds of risk this Commission should consider, but the Intervenor believe the broader context of the Act suggests that a more extensive range of risks must be considered by the Commission. And the recent history of investor-owned utilities in South Carolina certainly suggests that there are far graver risks to ratepayers than those posed by long-term fixed-price PPAs.

In fact, the utility’s construction and ownership of its own generating facilities—which as demonstrated by DESC’s resource plan is the utility’s preferred alternative to more power purchases from QFs—would expose ratepayers to far more risks than procuring the same energy and capacity via long-term fixed-price PPAs.

These include the risks that:

- Fuel prices that will exceed projections;
- Over the long term a utility asset will prove uneconomical, resulting in stranded assets;
- Utility construction projects will run over-budget or behind schedule;
- A utility construction project will be abandoned; and

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<sup>3</sup> John H. Raftery Direct Testimony at 11-12.

<sup>4</sup> Raftery Direct at 11-12.

- Environmental control or cleanup costs (e.g. coal ash disposal) will exceed expectations.<sup>5</sup>

When a utility purchases power under a long-term QF PPA rather than building a new generating unit, ratepayers are completely insulated from those risks, which are borne entirely by the QF.<sup>6</sup> The ratepayer pays only the energy and capacity value of the power actually produced by the QF.

All things being equal, artificially or unreasonably low avoided cost rates disincentivize the development of QF projects, and further expose ratepayers to the risks posed by utility-owned generation. (Other obstacles to QF development, such as commercially unreasonable PPA terms or obstacles to LEO formation, have similar impacts.) Competition from QFs also tends to drive energy and capacity costs down over the long term to the benefit of customers, and stifling QF development prevents that from happening.

DESC claims that the company has no incentive to understate its avoided cost rates because customers pay the cost of QF PPAs through fuel rates.<sup>7</sup> That is obviously incorrect. Over the long term, QF generation competes with (and can displace) new utility-owned generation. DESC's construction of its own generating facilities expands the company's rate base and increases profits for DESC's shareholders, even as it imposes additional risks on ratepayers. DESC therefore has a strong incentive to pursue avoided cost rates that deter further QF development, allowing the utility to satisfy its capacity needs with its own generating units.<sup>8</sup>

DESC claims that SCSBA members are incentivized to have avoided cost rates set as high as possible. That is also untrue. While SCSBA's members do clearly have an incentive to seek

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<sup>5</sup> Hamilton Davis Direct Testimony at 7-14; Ed Burgess Direct Testimony at 11-16, 35-36.

<sup>6</sup> Jon Downey Direct Testimony at 8-10.

<sup>7</sup> Raftery Direct at 12.

<sup>8</sup> Davis Direct at 14-15, Burgess Direct at 6-8.

avoided cost rates that enable them to develop projects in South Carolina, they are not incentivized to seek arbitrarily high avoided cost rates because to do so would invite market entry by power producers that could not otherwise compete in a low-cost environment. Competition should and does drive costs down over time, and this is to the benefit of ratepayers, as well as SPPs that are able to effectively manage costs in a competitive, lower-cost environment.<sup>9</sup>

#### **D. DESC's proposed Avoided Cost Calculations and Methodologies**

DESC asks the Commission to approve its application of the DRR methodology to calculate its avoided cost rates, including rates for energy and capacity.

##### **1. DESC's filing does not meet the transparency requirements of Act 62.**

In recognition of the difficulties that intervenors in past fuel dockets have had in evaluating the underlying assumptions of DESC's predecessor SCE&G's avoided cost calculations, Act 62 requires that "Each electrical utility's avoided cost filing must be reasonably transparent so that underlying assumptions, data, and results can be independently reviewed and verified by the parties and the commission." S.C. Code Ann. 58-41-20(J).

DESC's filing does not meet this standard, even with the benefit of multiple rounds of discovery from Intervenors. DESC's filings are far less transparent than Duke Energy Carolinas, LLC's ("DEC") and Duke Energy Progress, LLC's ("DEP")(collectively "Duke") filings, which themselves were not models of clarity. As a result, there may be additional problems with methodologies and assumptions beyond the issues identified in the testimony presented by SCSBA. Certainly, it would be impossible to independently "verify" the reasonableness of DESC's proposed rates based on the information that has been provided by the company.

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<sup>9</sup> Davis Direct at 14-15.

The issues on which there is a detrimental lack of transparency include, but are not limited to:

- DESC's rationale for selection of peak hours and peak seasons;
- Hourly avoided cost data and marginal cost data for the base and change case in DRR analysis;<sup>10</sup>
- Rationale for assessing need for operating reserves to address solar integration;
- The resource plan used in avoided capacity calculations (which differs from the plan submitted in the IRP *and that is relied on elsewhere in DESC's testimony*);
- Data on historical operating reserves (necessary to assess accuracy of operating reserve assumptions); and
- DESC's commodity price assumptions for power and capacity.

SCSBA recommends that the Commission reject DESC's proposed rates and direct the Company to provide further detail on the issues referenced above.

## 2. Use of separate methodologies for different categories of resource

DESC has proposed the separate methodologies for calculating avoided costs for different categories of QF:

1. Short-run avoided costs for solar and non-solar QFs up to 100 kW (PR-1)
2. Long-run avoided costs for solar and non-solar QFs up to 2 MW (PR-Standard Offer)
3. Long-run avoided cost for solar QFs with storage charged by solar.

For QFs larger than 2 MW, the Company will negotiate avoided cost contracts, calculating avoided capacity and avoided energy under the same broad methodology, but with "unit specific

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<sup>10</sup> Burgess Direct at 21.

data to calculate avoided costs.”<sup>11</sup> Setting aside the other methodological problems with DESC’s calculations, it is inappropriate for DESC to use these different avoided cost methodologies for solar and solar plus storage resource.

Intervenors do not dispute that under PURPA, avoided cost rates “may differentiate among qualifying facilities using various technologies,” so long as it is on “the basis of the supply characteristics of the different technologies.” 18 C.F.R. § 292.304(c)(2)(ii). However, the rates proposed by DESC do not accurately reflect those supply characteristics because they do not represent the full suite of QF technological possibilities of solar and solar-plus-storage facilities.<sup>12</sup>

SCSBA recommends as an alternative that a single, technology-neutral QF rate be determined that reflects the value of the resource to the system regardless of the underlying technology. This would provide a better price signal to prospective generators to deliver energy and capacity during the times they benefit customers most. DEC and DEP have, in their respective avoided cost dockets, proposed more granular, technology-neutral avoided cost rates. Although Intervenors believe there are significant methodological problems with those rates, Intervenors agree with Duke that a more granular, technology-neutral rate structure is better and more efficient.

### 3. Avoided Energy Cost Calculations

DESC uses the DRR method to calculate its avoided energy costs. DESC’s application of the method relies on complex modeling using the PROSYM production cost simulation. Although Intervenors do not argue that DRR is an inherently flawed methodology, there are several deficiencies in DESC’s application of the method that make its proposed energy rates not accurate, just, or reasonable. These include the following:

- 1) Biased selection of pricing periods. DESC has proposed four time-of-delivery periods,

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<sup>11</sup> Burgess Direct at 18.

<sup>12</sup> Burgess Direct at 18-19.

each with its own avoided energy cost. DESC's testimony does not explain how the peak hours or peak seasons were chosen. Although DESC has not provided (even after discovery) sufficient information to discern how pricing periods were selected, the fact that DESC's calculated rates are higher during the winter "Off Peak Season" months, and lower during the summer "Peak Season" months when solar resources are more abundant, suggests that either the selection of periods or the underlying modeling is biased against solar resources.<sup>13</sup> SBA recommends that more information be provided on DESC's production cost model to understand the patterns driving this disparity, and if necessary that the model be rerun with these inputs corrected. DESC should also be required to rerun its model to yield avoided costs results for each of 8760 hours, without pre-emptively aggregating the results into DESC-selected time periods.<sup>14</sup>

- 2) Inaccurate treatment of integration costs in avoided energy cost rates. DEC proposes to impose two forms of integration charge on solar QFs. First, DEC proposes a "Variable Integration Charge" (VIC) to be applied retroactively to existing QFs. Second, DESC has proposed to incorporate the supposed integration costs of future solar QFs directly into the avoided energy rate. Both forms of integration charge are far too high as a result of major flaws in DESC's analysis.<sup>15</sup> These methodological problems are discussed at length below. The inclusion of these integration costs in avoided energy rates renders them inaccurate, unjust, and unreasonable.
- 3) Multiple deficiencies in the treatment of solar plus storage resources. DESC proposes a single avoided energy rate for solar plus storage QFs, which is identical to the standard

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<sup>13</sup> Burgess Direct at 23-25.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.* at 28-29.

offer rate for solar QFs with no storage. This indicates that in its modeling, DESC did not make any adjustments to the QF resource output to account for the ability of storage to put more energy on the grid during peak times (when energy costs are higher) than a standalone solar resource, or its potential to avoid the alleged system impacts giving rise to DESC's integration charges.<sup>16</sup> In other words, DESC's calculated rates attach no additional value to storage, notwithstanding Act 62's requirement that avoided cost rates accurately account for solar plus storage resources. S.C. Code Ann. § 58-41-20(B)(3). Intervenors' suggestion (discussed above) that DESC be required to generate a technology-neutral avoided cost rate would partly resolve this issue through accurate price signals that would reward resources which can put more energy on the grid during high-value times (although it would not resolve the integration cost issue).

DESC's solar plus storage tariff also incorporates restrictive sizing requirements for storage facilities, which have no reasonable basis. Rather than these arbitrary requirements, DESC should be required to adopt a storage protocol similar to that proposed by DEC and DEP in its avoided cost dockets (subject to the adjustments recommended by Intervenors in that docket).<sup>17</sup>

Furthermore, DESC proposes that a QF will only be eligible for the solar plus storage rate if DESC controls dispatch of the storage. This requirement is unnecessarily restrictive, deprives QF owners of the ability to respond to price signals, and introduces significant uncertainty as to the value that storage developers and owners can expect from their QF investment. To the extent DESC has legitimate interests in having QFs operate storage systems to support system needs, intervenors propose that DESC do so through pricing

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<sup>16</sup> *Id.* at 29-31.

<sup>17</sup> *Id.* at 31-32.

and/or the implementation of specified minimum operating requirements.<sup>18</sup>

- 4) Unrealistic modeling assumptions. Based on DESC's modeling and discovery responses, DESC's model appears to have very limited consideration of energy imports and exports. This does not reflect actual system operations and may have a meaningful impact on avoided energy cost calculations.<sup>19</sup> In addition, the resource plan on which DESC bases its production cost modeling relies on outdated and unrealistically high estimates of the cost of solar PV and battery storage systems. This suggests that the resource plan may not reflect least-cost planning and may impact the results of avoided cost calculations.<sup>20</sup>
- 5) Failure to account for environmental costs. DESC's avoided energy cost calculations do not account for environmental costs related to coal ash management and disposal, despite the fact that DESC's IRP shows continued reliance on coal-fired generation units and the company continues to incur significant coal ash disposal costs.<sup>21</sup>

As explained above, DESC has not provided sufficient information regarding the hourly avoided cost results that would allow for an alternative to be developed. Moreover, DESC has refused in discovery to rerun any of its models with different inputs (despite requests to do so), even though it is clearly capable of doing so in a timely manner.

#### 4. Avoided Capacity Cost Calculations

DESC seeks approval of its proposed methodologies, calculations, and avoided capacity rates. DESC purports to use the DRR method to calculate avoided capacity rates. However, DESC does not actually apply that methodology in its calculation of capacity rates. It instead starts its capacity cost analysis with the premise that solar QFs (or at least those without storage) provide

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<sup>18</sup> *Id.* at 33-34.

<sup>19</sup> *Id.* at 34.

<sup>20</sup> *Id.* at 34-35.

<sup>21</sup> *Id.* at 35-36.

no capacity value whatsoever, obviating the need for a DRR analysis. As discussed further below, this conclusion is not justifiable and renders DESC's capacity cost "calculation" unjust and unreasonable. With respect the avoided capacity rates that DESC has calculated, there are several deficiencies in DESC's calculation methodologies which render the proposed rates not accurate, just, or reasonable. These issues include:

- 1) DESC's Fixed Cost Assumptions: DESC initially indicated that a new combined cycle plant, as well as wholesale capacity purchases, were used to calculate avoided capacity rates, but one day before SCSBA's testimony was due, DESC stated that it actually used an "updated resource plan" applying ICT peaking turbines rather than combined cycle.<sup>22</sup>

This belated information indicates that DESC has chosen the lowest-cost peaking unit in the Energy Information Administration's predetermined list of potential generation technologies, which does not necessarily reflect the next peaking unit that DESC will ultimately select to meet future peak demand, including available units that are more efficient and flexible but have higher capital costs.<sup>23</sup> SCSBA recommends that DESC be required to apply a CT cost assumption that represents a midpoint between DESC's proposed CT unit choice and the cost of a more efficient and flexible unit (including avoided transmission system upgrade costs).<sup>24</sup>

Moreover, the capital costs DESC used to select the base resource plan may be incorrect. The limited information DESC has provided to SCSBA indicates that DESC's assumed costs of constructing new battery storage may be substantially higher than recent Lazard reports.<sup>25</sup>

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<sup>22</sup> *Id.* at 39-40.

<sup>23</sup> *Id.* at 40-42.

<sup>24</sup> *Id.* at 42-43.

<sup>25</sup> *Id.* at 44-45.

- 2) DESC's Assumptions Regarding Capacity Purchases: In addition to the cost of the generation resource itself, DESC also estimates the cost of capacity purchases from other neighboring utilities to avoid a capacity shortfall. However, DESC applies capacity purchase estimates that do not reflect the market price and depress the avoided capacity rates available to QFs.<sup>26</sup> Instead, DESC should apply the capacity purchase prices that it has used in its Dominion Energy Virginia 2018 IRP, which includes estimates for PJM's RTO-wide clearing prices for capacity delivery over the following fifteen years, and which are more likely to reflect the true cost DESC would incur in order to prevent a capacity shortfall.<sup>27</sup>
- 3) Capacity Value of Solar QFs: DESC considers its need for future capacity to be primarily in the winter season, even though it has peak load hours in both winter and summer months, and DESC has determined that only generators that can reliably provide capacity during all its peak periods can receive a capacity payment, despite the fact that there are a large number of high-load summer months. This approach of allocating 100% of capacity value to winter unfairly discounts summer capacity value that QFs can provide and may impose unreasonable costs on ratepayers by using a methodology that deviates from the prevalent industry standard.<sup>28</sup> DESC's winter capacity value ignores clear evidence from DESC's own witnesses that the difference between summer and winter peaking "could easily reverse with a small change in customer load characteristics" and that the difference in summer and winter demand projected over the next 19 years is less than 2%.<sup>29</sup> DESC's

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<sup>26</sup> *Id.* at 43.

<sup>27</sup> *Id.* at 44.

<sup>28</sup> *Id.* at 46-47.

<sup>29</sup> *Id.* at 48-49.

analysis also uses only a single year of load data to justify its position and fails to present any historical data to adequately support its proposal.<sup>30</sup>

DESC's determination of capacity value also ignores other calculations that DESC performed – specifically “effective load carrying capacity” (“ELCC”) calculations, a commonly used method to determine capacity value for a generation source that has been adopted in numerous states.<sup>31</sup> DESC's own results indicate that solar additions up to 1 GW have a capacity value of about 24% of nameplate capacity, or about 240 MW. Thus, according to DESC's own testimony, solar PV has a meaningful, non-zero capacity value.<sup>32</sup> DESC's finding that solar QFs provide no capacity value is flawed and should be rejected. SCSBA recommends that the Commission either (1) disregard the seasonal allocation used in DESC's application and instead rely on the ELCC value that DESC calculated to determine capacity payment or (2) require DESC to continue using a seasonal allocation methodology but instead adjust the weightings to more accurately reflect DESC's summer peak load hours.<sup>33</sup> SCSBA provides alternative avoided capacity calculations under both of these scenarios.<sup>34</sup>

#### **E. DESC's Proposed Integration charge**

As discussed, DESC proposes to impose two forms of integration charges: (1) a “Variable Integration Charge” (“VIC”) to be applied retroactively to existing QFs, and (2) a decrement to avoided energy costs intended to incorporate the supposed integration costs of future solar QFs directly into the avoided energy rate (the “Embedded Integration Charge” or “EIC”). DESC relied

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<sup>30</sup> *Id.* at 50.

<sup>31</sup> *Id.* at 51-52.

<sup>32</sup> *Id.* at 55.

<sup>33</sup> *Id.* at 56-57.

<sup>34</sup> *Id.* at 57-61.

on a study by Navigant Consulting to determine the VIC (“Navigant Study”), and DESC relied on its own internal analysis to establish the EIC. Both forms of integration charge are excessively high as a result of major flaws in DESC’s analysis.

As an initial matter, SCSBA submits that any integration cost methodology developed and imposed on QFs should not be established until the Commission and/or the ORS has conducted the independent integration study expressly contemplated and permitted in Act 62.<sup>35</sup> This analysis will allow the study’s administrator and interested parties to evaluate both the costs and benefits of increased renewable energy generation to DESC’s grid. An independent study will permit a neutral third-party to make this assessment, rather than basing an integration charge on a utility-commissioned study conducted without any third-party review or stakeholder involvement.<sup>36</sup>

With respect to the VIC proposed by DESC, SCSBA demonstrates through testimony that the Navigant Study includes serious methodological flaws and has not been adequately supported. SCSBA specifically addresses the following flaws:

1. The Navigant Study improperly models DESC as an islanded system, which leads to a significant overestimation of integration costs.<sup>37</sup> This modelled islanding is not a true reflection of how DESC’s system operates, which involves constant interaction between DESC’s balancing area and those surrounding it simply as a function of being physically interconnected to a larger surrounding system. This benefit of being physically interconnected exists regardless of contracts for purchases or sales between balancing areas, which DESC may also be able to enter into with neighboring utilities.<sup>38</sup> For

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<sup>35</sup> Act 62, S.C. Code Ann. § 58-37-60(A).

<sup>36</sup> Burgess Direct at 63-65.

<sup>37</sup> *Id.* at 66-71.

<sup>38</sup> *Id.*

example, with respect to Duke Energy's proposed integration charge, which similarly modelled Duke's balancing areas as islands, Duke's own sensitivity analysis showed a 15% decrease in integration costs when Duke modeled DEC and DEP as a single balancing area.<sup>39</sup> SCSCA recommends that if the Commission approves an integration charge in this proceeding, it should reflect the fact the DESC is not actually an islanded system.<sup>40</sup>

2. The Navigant Study does not appropriately account for the reduction in both the forecasting error, as well as the volatility of solar generation that comes from an increasing solar fleet. An increasing number of total installed solar MW can imply both larger solar systems, as well as geographic diversity.<sup>41</sup> In both cases, the variability and the forecast error of solar generation does not scale linearly with the total solar installations, as assumed in the Study.<sup>42</sup> This flawed methodology fails to adequately account for geographic diversity of solar – i.e., that the variability of solar facilities in different locations will be different, based primarily on environmental factors (e.g. cloud cover), so as more solar comes on the grid, the total variability will not scale linearly, since not all solar facilities will ramp up or down at the same time. The Navigant Study also appears to scale the volatility of the four solar locations it includes in its analysis linearly, meaning that, for example, doubling the amount of solar on the grid will simply double the level of solar variability.<sup>43</sup> Arbitrarily limiting the number of locations and linearly scaling solar output with total installed solar MW nameplate results in

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<sup>39</sup> Direct Testimony of Ed Burgess (Duke Energy Progress, LLC and Duke Energy Carolinas, LLC) at 76-78.

<sup>40</sup> Burgess Direct at 70-71.

<sup>41</sup> *Id.*, at 71-75.

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

overestimating the additional required reserves and unreasonably increasing the cost of variable integration.<sup>44</sup> SCSBA recommends that the Commission direct DESC to estimate the VIC (if any) on real-world data that more accurately represent how variability and forecast errors scale as the solar fleet grows and becomes more geographically diverse rather than rely on modeled projections.<sup>45</sup>

3. The Navigant Study uses an excessively long 4-hour ahead forecast, which overestimates the solar forecast error.<sup>46</sup> Modern forecasting methodologies apply much shorter forecast periods, some as short as 5-minute, which significantly increases the accuracy of the forecasts. The VIC should be calculated based on a more realistic shorter forecast window, such as a 2-hour ahead forecast. A 2-hour ahead forecast would be more appropriate and would result in significantly lower forecast error and thus reduce payment for unnecessary reserves.
4. The Navigant Study fails to adequately account for the fact that additional operating reserves are not needed for all 8760 hours of the year. Navigant calculates the VIC costs using varying levels of operating reserves and then blends those costs using weightings tied to the proportion of days with the appropriate level of solar uncertainty.<sup>47</sup> Requiring additional reserves for all hours of the year results in excessively and unrealistically high costs. The Study tries to address that with blending results of different runs, but this approach does not sufficiently address the error introduced by requiring the same reserves during all hours. This “blending” approach applied in the Navigant Study is inappropriate and should be rejected.

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<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 75-76.

<sup>47</sup> *Id.* at 77-78.

5. DESC's assumption in its proposed Embedded Integration Charge ("EIC") that additional reserves equaling 35% of installed solar capacity are required to integrate solar is unsupported and should be rejected.<sup>48</sup> DESC's limited analysis does not support its assertion. Specifically, (1) DESC's assumption that a "drop" in solar generation requires a 1:1 increase in operating reserves is unsupported; (2) DESC did not provide any data or analysis of its actual operating reserves and related costs over the same time period that the solar "drops" were observed. Additionally, the flaws in the Navigant Study addressed below also apply to DESC's proposed EIC.<sup>49</sup>

DESC's proposed EIC appears to be approximately \$6.70/MWh which far exceeds the proposed VIC rate of \$3.52-\$4.14/MWh, which SCSBA contends is also far in exceedance of any actual integration cost. The application of the EIC results in an avoided energy rate that is barely half of the proposed non-solar avoided energy rate.

6. DESC's integration charge analysis fails to incorporate actual observed integration cost levels based on increased levels of solar. For example, data recently provided by Duke demonstrate that Duke's actual operating reserves increased by only approximately 3% between 2015 and 2018, despite a 409% increase in solar generation in North Carolina, and that operating reserves actually decreased in years 2016 and 2017.<sup>50</sup> Year-to-year changes in operating reserves are impacted by a variety of factors, not just solar, and any integration analysis should account for such factors.<sup>51</sup>
7. DESC's integration cost analysis also fails to consider or evaluate ways that DESC could more effectively integrate renewable energy onto its grid in the future and ancillary

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<sup>48</sup> *Id.* at 79-81.

<sup>49</sup> *Id.*

<sup>50</sup> *Id.* at 83.

<sup>51</sup> *Id.*

services that renewable energy generators can provide. Specifically, DESC could actively support the development of and participation in a regional energy imbalance market, which has proven to be a significant benefit to utilities and their customers in the Western Interconnection. DESC could enhance its renewable energy forecasting procedures, which would enable more efficient unit commitment and dispatch processes, and DESC could improve the flexibility of its baseload resources.

For these reasons, SCSBA recommends that the Commission reject DESC's proposed VIC and EIC and require the independent study permitted under Act 62 before adopting any integration charge or credit for QFs.

#### **F. Proposed PPA Terms and Conditions**

DESC asks this Commission to approve its proposed Form PPA for QFs over 2 MW ("Form PPA"), Standard Offer PPA ("Standard Offer," and collectively with the Form PPA, "the Proposed PPAs"), as well as a proposed Notice of Commitment Form ("NoC Form").<sup>52</sup> The terms and conditions of the two Proposed PPAs are nearly identical, and unless specified all comments and criticisms that apply to one apply equally to the other. Intervenors' position is that many of the terms and conditions of the Proposed PPAs are commercially unreasonable and/or inconsistent with PURPA and Act 62.

Intervenors have proposed alternative versions of the Proposed PPAs that are commercially reasonable and legally sufficient. These proposed alternatives, which are presented as redlines to the Proposed PPAs (with comments on specific provisions), are included as Exhibits to Mr. Steven J. Levitas's Prefiled Direct Testimony.<sup>53</sup>

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<sup>52</sup> John E. Folsom, Jr. Direct Testimony, Ex. JEF-1, JEF-2, and JEF-3.

<sup>53</sup> Levitas-1 is a redlined copy of the proposed Large QF PPA (Dominion Exhibit JEF-1) reflecting proposed revisions to the PPA to address concerns raised by SCSBA witness Levitas. Because Dominion's proposed Standard Offer PPA (Dominion Exhibit JEF-2) is virtually identical to its proposed Large QF PPA, SCSBA has not

## 1. Proposed PPAs

Intervenors have identified the following issues with DESC's Proposed PPA which make the proposed PPAs not just and reasonable. Intervenors propose corresponding changes to the Proposed PPAs as a redline to the Form PPA in exhibit Levitas-1.

- Liquidated Damages. The PPAs impose substantial liquidated damages on a Seller which is unable to meet its "Completion Date" milestone and allows for termination of the PPA if the Seller misses the Completion Date by more than 120 days. These amounts are far in excess of any actual damages Dominion would incur as result of a QF project failing to be placed in service.<sup>54</sup> A more appropriate measure of damages would be \$5000 per MW<sup>55</sup> nameplate capacity up to 20 MW, and \$2000 per MW above that amount (so the LDs for a PURPA-maximum 80 MW project would be \$220,000). Although the Proposed PPAs reasonably afford relief from liquidated damages based on force majeure events and interconnection delays associate with the unavailability of "Interconnection Facilities," the relevant language should be amended to clarify that this also applies to delays in the construction of Network Upgrades.<sup>56</sup>
- Completion Date deadline: The Proposed PPAs require that the QF achieve completion within twelve months following the Effective Date of the PPA or 365 days following the submittal of a Notice of Commitment to Sell Form. Given the relief provided for Force Majeure and utility interconnection delays, most QFs should be able to satisfy the Conditions Precedent set forth in Section 4.1 of the Proposed PPAs within the specified

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provides a separate markup of that document. However, SCSBA's comments on, and proposed modifications to, the Dominion Large QF PPA apply with equal force for Dominion's Standard Offer PPA.

<sup>54</sup> Levitas Direct at 9-10.

<sup>55</sup> Unless otherwise specified, all of Intervenors' references to Nameplate Capacity are in MW AC.

<sup>56</sup> Levitas Direct at 11-12.

time periods. However, a simpler approach would be to define the Completion Date in reference to the estimated in-service date contained in the Interconnection Agreement, with a day-for-day extension in the case of the Interconnecting Utility's delays beyond that date.<sup>57</sup>

- Guaranteed Energy Production: The Proposed PPAs provide severe penalties, up to and including termination of the PPA, for failure to deliver a minimum of 85% of the Contract Quantity of energy in two successive years. These severe consequences are not commercially reasonable and have no reasonable justification.<sup>58</sup>
- Energy Storage: The proposed PPAs do not include any terms related to the integration and operation of energy storage devices, despite the fact that Act 62 requires each utility's avoided cost methodologies to fairly account for "small power producers ... utilizing energy storage equipment," and directs the Commission to consider tariffs relating to energy storage. DESC also indicates that solar plus storage facilities must meet certain operational requirements to be eligible for storage-specific rates but does not provide corresponding PPA language. The Commission should address the issue of appropriate terms and conditions for storage devices in this proceeding, either by adopting a specific set of energy storage provisions or directing the parties to engage in a stakeholder process to develop such provisions.<sup>59</sup>
- Due diligence period: It would be appropriate to include a limited diligence period of 30 days is to allow Sellers to confirm project viability once they have secured pricing. The proposed DEC and DEP Large QF PPAs include such a diligence period, and negotiated

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<sup>57</sup> Levitas Direct at 13.

<sup>58</sup> *Id.* at 14.

<sup>59</sup> *Id.* at 16-17, Burgess Direct at 29-34.

PPAs offered by Dominion's predecessor SCE&G included a 12-month financing diligence period. Finally, a diligence period of this length is really tantamount to the utility offering indicative pricing that is firm for a defined period of time, which is commercially reasonable and consistent with past utility practice in the Carolinas.<sup>60</sup> Due to the high degree of uncertainty associated with the interconnection process and interconnection costs, the PPA should include a right of the Seller to terminate the PPA without liability if the cost of interconnection facilities and network upgrades required for the facility to be interconnected to Dominion's system exceeds \$75,000 per MW of project nameplate capacity.<sup>61</sup>

- Utility rights regarding third-party contracts: The Proposed PPAs give the utility the right to review and approve the QF's contracts with third parties, and also make a breach of those third party contracts a breach of the PPA. This is unnecessary and not commercially reasonable.<sup>62</sup>
- Calculation of damages: The calculation of Buyer's damages for termination of the Proposed PPA after commercial operation is commercially unreasonable and inappropriate in several respects.<sup>63</sup>
- Utility termination right: The utility's unilateral right to terminate the PPA if it experiences a "Qualifying Adverse Effect" or other extraordinary event, such as bankruptcy, is commercially unreasonable.<sup>64</sup>

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<sup>60</sup> Levitas Direct at 16-17.

<sup>61</sup> *Id.* at 22-23.

<sup>62</sup> *Id.* at 17.

<sup>63</sup> *Id.* at 17-18.

<sup>64</sup> *Id.* at 19-20.

- Surety Bond: The Proposed PPA requires that any Surety Bond for performance assurances must be in a form approved by Buyer “in its discretion.” The bond form is to be included as an exhibit to the PPAs and approved by the Commission. SCSBA witness Mr. Levitas has provided a commercially reasonable form surety bond as Levitas-3.
- Other PPA issues. A number of other proposed PPA modifications, which are less substantial but still reflect important commercial and legal issues, are discussed in Mr. Levitas’s testimony and reflected in SCSBA’s redline of the Proposed Large QF PPA (Exhibit Levitas-1).<sup>65</sup>
- PPA Tenor. The duration, or “tenor,” of a QF contract is critical to a project’s ability to obtain financing. PURPA requires that QFs be entitled to contracts of sufficient duration to provide reasonable opportunities to attract capital. And generally speaking, the lower the rates under a PPA, the longer the term is required to attract financing. Given DESC’s aggressively low proposed avoided cost rates, which are further reduced by the amount of alleged solar integration costs, longer tenor will be needed than would be the case with a higher avoided cost rate.<sup>66</sup> DESC claims that longer PURPA PPAs inappropriately subsidize QFs at the expense of imposing additional risk on ratepayers, but this is untrue, especially in comparison to the greater risks imposed on ratepayers by utility-owned generating projects.<sup>67</sup>

#### **G. Proposed NOC Form and LEO Standard**

DESC asks this Commission to approve its proposed Notice of Commitment Form (“NoC Form”), which incorporates DESC’s proposed standard for establishing a Legally Enforceable

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<sup>65</sup> Levitas Direct at 20-22.

<sup>66</sup> *Id.* at 7-8; Chilton Direct at 6-8.

<sup>67</sup> Levitas Direct at 8.

Obligation under PURPA. Through its proposed NOC Form, DESC proposes that a QF must meet the following prerequisites in order to establish a LEO:

- 1) Commitment to execute a PPA within 90 days and to deliver power within 365 days of Notice of Commitment Form Submittal Date;
- 2) Commitment to deliver full electrical output to the Company for a period of 10 years, or for such lesser period that may be mutually agreed to in a PPA;
- 3) Demonstration of control of the Project Site and required land-use approval and environmental permits;
- 4) Requirement to have requested Interconnection Service from the Company and (if Interconnection Service has not been established) to have executed a System Impact Study agreement with all required technical information; and
- 5) Payment of a non-refundable \$5000 fee.

Intervenors disagree with DESC's characterization of the purpose of the LEO concept and maintain that components of the proposed LEO standard are unreasonable and contrary to PURPA.<sup>68</sup> Specifically, the requirements that the QF have first secured all required land-use approvals and environmental permits, and that it place its facility in service within 365 days of executing the form, are unreasonable and violate PURPA, because they give the utility the absolute ability to frustrate LEO formation and because they impose "unreasonable obstacles" to obtaining a LEO. In addition, a small change is needed to the requirement relating to interconnection service to make clear that Seller need not have executed a System Impact Study Agreement unless one has been tendered to it by DESC.<sup>69</sup> Furthermore, in the event a QF fails to deliver on its LEO and

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<sup>68</sup> *Id.* at 24.

<sup>69</sup> *Id.* at 27-28.

incurs liquidated damages as proposed below, the damages owed should be reduced by the amount of the \$5000 fee already paid to establish a LEO.<sup>70</sup>

Intervenors propose to revise the NoC Form to reflect these changes to the LEO standard, and to incorporate three other changes:

- (1) Provide that the LEO terminates if Seller ceases to comply with the requirements of LEO formation and any such deficiency fails to cure within ten (10) business days;
- (2) Remove the vague and ambiguous “make-whole” provision; and
- (3) Give the Seller the right to terminate the PPA without liability if the interconnection facilities and network upgrades required for the facility to be interconnected to Dominion’s system exceed \$75,000 per MW of nameplate capacity.<sup>71</sup>

Intervenors agree that because a LEO is premised on a QF’s unilateral commitment to deliver its energy and capacity to the utility, a QF that establishes a LEO but ultimately fails to deliver power should have to pay the same liquidated damages as a QF that breaches a Standard Offer or Large QF PPA (i.e. \$5000 per MW capacity up to 20 MW, and \$2000 / MW thereafter). This will ensure that a LEO represents a *bona fide* commitment by the QF, and will also compensate the utility for any harm as a result of a QF failing to deliver on a LEO.<sup>72</sup> However, DESC’s proposal that a QF that terminates a LEO will not be eligible for fixed-rate pricing for two years is unreasonably harsh and not authorized by PURPA.<sup>73</sup> Because of the uncontrollable uncertainties of the interconnection process and interconnection costs, Intervenors propose that a QF be allowed to terminate its LEO without paying damages if the System Impact Study reveals that interconnection costs are projected to exceed \$75,000 per MW requested capacity.

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<sup>70</sup> *Id.* at 29.

<sup>71</sup> *Id.* at 29-30.

<sup>72</sup> *Id.* at 26.

<sup>73</sup> *Id.* at 25.

An alternative version of the NoC Form (which incorporates the LEO standard) is presented as an Exhibit to Mr. Levitas's Direct Prefiled Testimony (Levitas-2).

## **II. LEGAL ISSUES PRESENTED**

This docket presents a number of important legal issues under state and federal law, including the following:

- What is the scope of risks that this Commission must “strive to reduce” being placed on the using and consuming public, as required by S.C. Code Ann. § 58-41-20(A)?
- Did the utility comply with the Requirement of Act 62 that their “avoided cost filing must be reasonably transparent so that underlying assumptions, data, and results can be independently reviewed and verified by the parties and the commission”? If not, what is the remedy for their failure to do so?
- Does the utility's proposed avoided cost calculations and methodologies comply with the requirements of PURPA and Act 62?
- Does the utility's proposed avoided cost calculations and methodologies adequately account for storage resources, as required by Act 62?
- Under PURPA, can DESC require full dispatch control of a storage resource in order for a solar plus storage QF to qualify for capacity payments?
- Do the utility's proposed integration charges comply with PURPA requirements including the requirement that QFs are entitled to contract at fixed rates established when they incur a legally enforceable obligation?
- Does DESC's proposed standard for establishing a Legally Enforceable Obligation (“LEO”) comply with PURPA and implementing orders and regulations of FERC?

- Are the utility's proposed Contract Terms commercially reasonable, and do they comply with PURPA and implementing orders and regulations of FERC?
- Do the liquidated damages provisions of the proposed Form PPA and Standard Offer PPA comply with South Carolina contract law?
- Have intervening parties proposed just and reasonable alternative rates, terms, and conditions that meet the goals of Act 62 in advancing the best interests of ratepayers, treating small power producers in a non-discriminatory manner, and promoting the state's policy of encouraging renewable energy?

### **III. IDENTIFICATION OF WITNESSES AND SUMMARY OF TESTIMONY**

Intervenors intend to present the testimony of the following witnesses at the hearing in this case:

#### **1. Jon Downey**

Summary of Testimony: Jon Downey is the President and CEO of Southern Current LLC, South Carolina's leading developer of utility-scale solar generating facilities. As a business owner and the CEO of a successful energy company, Jon Downey's testimony is intended to provide this Commission with additional insight into the economic development perspective of companies like Southern Current, including the operational processes, risks, and underlying regulatory and policy frameworks that support increased competition in electric generation. In addition, Mr. Downey's testimony explains how businesses like Southern Current help to elevate South Carolina's economic competitiveness and deliver value to ratepayers by reducing risk and increasing stability in electricity rates.

Mr. Downey's testimony also provides an overview of Southern Current and a high-level description of the Company's investment portfolio of solar assets, as well as an outline of the steps

and investments necessary to bring a solar project to the point of executing a power purchase agreement (“PPA”), including the financial risks assumed by solar developers. The testimony then contrasts the risks from third party-owned solar assets with the risks borne by ratepayers under the traditional cost of service utility business model.

Finally, Mr. Downey’s testimony explains the importance of federal and state policies like PURPA and Act 62 for enabling effective competition in monopsony energy markets like South Carolina, as well as the spectrum of benefits that flow from that competition to the state’s businesses and citizens.

## **2. Hamilton Davis**

Summary of Testimony: Hamilton Davis is the Director of Regulatory Affairs for Southern Current, LLC. His testimony begins with an overview of South Carolina Act No. 62 of 2019 (“Act 62” or “The Act”) as it relates to these proceedings, including the Act’s goals and the authority and direction given to this Commission therein. Mr. Davis illustrates how Act 62 is essentially a reset of utility regulation as it pertains to a range of issues related to the expansion of renewable energy generation and utility resource planning, and how it provides this Commission with both increased direction and discretion in determining the most appropriate path forward for energy development in South Carolina. Mr. Davis further elaborates on the Act’s goals in promoting South Carolina’s policy of encouraging renewable energy, including the fact that this Commission is directed to address all renewable energy issues in a fair and balanced manner that considers costs and benefits to all customers and establishes just and reasonable rates that reflect changes in the utility industry as a whole, while also recognizing and prioritizing increased competition and consumer choice within the state’s electricity marketplace.

Mr. Davis then discusses the risks and incentives for utilities, solar developers, and ratepayers inherent in both the traditional cost of service utility business model and the solar business model enabled by Act 62 and the Public Utilities Regulatory Act of 1978 (“PURPA”). The testimony emphasizes the often-overlooked risks associated with utility-owned generation that do not exist for third party-owned solar generation (“Small Power Producers” or “SPPs”), because those risks are borne by the SPPs rather than customers. In other words, when generation is owned by SPPs, customers are shielded from these risks. Additionally, Mr. Davis explores the various incentives for utilities and SPPs as they relate to avoided cost rates.

Finally, Mr. Davis provides an overview of PURPA and its implications for energy production in South Carolina. Similar to Act 62, PURPA was established, in part, to diversify electric generation resources by encouraging energy production from small power producers. Congress intended PURPA to shift a portion of electric generation away from resources built, owned, and rate-based by vertically integrated monopoly electric utilities that often resulted in cost overruns paid by ratepayers. Among other goals like energy conservation and efficiency, PURPA was intended to inject limited competition into monopsony energy markets where the only legal opportunity for small power producers to sell electricity is to a monopoly utility.

### **3. Ed Burgess**

Summary of Testimony: Mr. Ed Burgess is a Senior Director at Strategen Consulting and is an expert on utility economics and avoided cost calculations and methodologies. Mr. Burgess’s Direct Testimony first provides background information regarding the underlying utility incentive structures that influence DESC’s proposed avoided cost rates in this proceeding, the potential costs and risks to DESC’s customers from traditional resources, compared to third-party owned resources, and the importance of a technology-neutral approach to setting avoided

cost rates. Mr. Burgess's Direct Testimony then critiques (1) DESC's proposed avoided energy rates; (2) DESC's avoided capacity rates; and (3) DESC's proposed Variable Integration Charge.

With respect to DESC's avoided energy rates, Mr. Burgess critiques DESC's lack of modeling transparency, including the selection of pricing periods. Mr. Burgess notes that contrary to Act 62's requirement of "reasonably transparent" data, DESC has failed to provide data and information necessary to conduct a robust analysis. With respect to the avoided energy pricing periods DESC has proposed, Mr. Burgess notes that DESC's testimony fails to explain how the peak hours or seasons – which are critical to avoided energy rates – were chosen or justified.

Next, Mr. Burgess critiques DESC's inappropriate treatment of storage in several respects. Mr. Burgess addresses DESC's failure to account for flexible storage dispatch capabilities, which provide increased value to DESC. Mr. Burgess notes that DESC's proposed avoided energy rates for solar and storage appear to include the embedded "integration costs" despite the fact that storage can likely mitigate any need for additional operating reserves. Mr. Burgess assesses DESC's arbitrary and unsupported size limitations on storage systems and DESC's restrictive, ill-defined, and unsupported proposal to "control the dispatch of storage." Mr. Burgess provides alternatives to these inappropriate proposals.

Finally, Mr. Burgess addresses DESC's limited consideration of energy imports and exports which may have meaningful impact on avoided energy rates. Mr. Burgess also critiques DESC's use of an outdated analysis in its IRP regarding the cost of solar and battery storage systems, and he addresses the lack of consideration of environmental costs that may be avoided. Mr. Burgess states that more information is needed from DESC in order to allow him to calculate

alternative avoided energy rates, and that DESC has been unwilling to rerun any of its models with different inputs, despite requests to do so.

With respect to DESC's avoided capacity rates, Mr. Burgess critiques the capital cost assumptions that DESC has used for new and purchased capacity. Mr. Burgess states that DESC initially indicated that a new combined cycle plan, as well as wholesale capacity purchases, were used to calculate avoided capacity rates, but that one day before Mr. Burgess' testimony was due, DESC clarified that it used an "updated resource plan" applying ICT peaking turbines rather than a combined cycle plant. Mr. Burgess notes that DESC has selected the lowest cost available peaking unit which likely does not correspond to the unit that DESC will ultimately select to meet future peak demand. Mr. Burgess proposes more reasonable and appropriate peaker units that DESC should apply in its avoided capacity calculation. Mr. Burgess also identifies that DESC's estimated capacity purchase cost estimates are likely too low and recommends that DESC apply PJM clearing prices which are likely more accurate.

Mr. Burgess also addresses DESC's inaccurate assumptions regarding the capacity value of solar QFs. Mr. Burgess calls into question DESC's assumptions regarding winter vs. summer capacity allocation and rebuts DESC's contention that 100% of capacity value is in winter months and that solar QFs are incapable of providing capacity value, which is contrary to DESC's own testimony and calculations. Mr. Burgess contends that the effective load carrying capacity ("ELCC") calculations that DESC has completed would more accurately reflect the capacity value of solar. Mr. Burgess proposes a revised calculation of DESC's avoided capacity costs based on his critiques and analysis.

Finally, Mr. Burgess critiques DESC's proposed integration charges. Mr. Burgess first emphasizes that Act 62 provides specific guidelines for the Commission to conduct an

*independent* integration study. Rather than relying on a study commissioned by DESC without stakeholder input or neutral third-party analysis, Mr. Burgess recommends that the Commission conduct the independent integration study contemplated by Act 62 before determining whether any integration charge is appropriate.

With respect to DESC's currently-proposed Variable Integration Charge and its Embedded Integration Charge, Mr. Burgess addresses serious methodological flaws in the modeling used by Navigant Consulting to calculate and justify the Variable Integration Charge. The Navigant Study applies numerous methodologies that do not reflect real-world requirements or operations, and the result is an inaccurate and unsupported Solar Integration Charge. DESC has also applied unsupported analysis to justify its Embedded Integration Costs for future QFs, which Mr. Burgess contests should be rejected. If the Commission were to adopt an integration charge in this proceeding before conducting the independent integration study, Mr. Burgess recommends multiple alterations to the calculation of the Variable Integration Charge to address its numerous deficiencies.

#### **4. Steven J. Levitas**

Summary of Testimony: Steven J. Levitas is the Senior Vice President for Strategic Initiatives for Pine Gate Renewables, LLC. Mr. Levitas' Direct Testimony addresses (1) DESC's proposed Standard Offer and Large QF PPAs and Terms and Conditions; (2) DESC's proposed Notice of Commitment form, including the standard for establishing a LEO; and (4) DESC's proposed Integration Charges.

With respect to DESC's proposed Standard Offer and Large QF PPAs, Mr. Levitas notes that it is not inappropriate for both PPAs to be substantially similar, as proposed by DESC. Mr. Levitas addresses the requirements for the PPAs to comply with PURPA, including the

requirement for long-term fixed contracts, and he emphasizes that the duration of the PPA cannot be considered in vacuum and must instead be evaluated in parallel with the applicable avoided cost rate. Mr. Levitas rebuts DESC's assertions that long-term QF contracts represent a subsidy to QFs by DESC customers and describes the benefits to the utility and its customers of long-term fixed contracts.

Mr. Levitas next addresses a variety of the proposed PPA provisions that are not commercially reasonable. He notes that the liquidated damages provisions are unreasonably high, and he recommends an alternative figure. Mr. Levitas states that delays caused by utility interconnection work, including network upgrades, should not penalize QFs, and he recommends alterations to the proposed deadlines for project completion. Mr. Levitas also recommends changes to the guaranteed energy production provision, and notes that the proposed shortfall limits are not commercially reasonable. With respect to energy storage provisions, Mr. Levitas recommends additions to the PPAs that would clarify and address the ability of QFs to include or add energy storage to facilities, and he describes the undefined and unreasonable operational control that DESC proposes to assert over storage facilities. Mr. Levitas recommends the inclusion of a reasonable due diligence period for QFs, he addresses DESC's proposed damages provisions, and he recommends the inclusion of a termination right by the QF if interconnection cost estimates exceed \$75,000. Mr. Levitas also emphasizes that the fact that a PPA has been agreed to by one or more developer in the past does not necessarily mean that the PPA is commercially reasonable.

With respect to DESC's proposed Notice of Commitment ("NoC") Form, including LEO formation, Mr. Levitas describes the applicable LEO standard as established by FERC, including that the establishment of a LEO should turn solely on the QF's commitment to sell, and not the utility's actions. Mr. Levitas testifies that in order to form a LEO a QF must make a binding

commitment to sell its output to the utility, subject to consequences for failing to do so. Mr. Levitas emphasizes that LEO standards in other states are not relevant to this proceeding. Mr. Levitas argues that DESC's NoC and LEO formation proposals includes a number of unreasonable and inappropriate requirements, and he provides alternative recommendations to address these issues.

Finally, Mr. Levitas describes his serious concerns about DESC's proposed integration charge. In addition to supporting the critiques by SCSBA's other witnesses, Mr. Levitas addresses DESC's proposal to embed the integration charge in the avoided energy rates and notes that this approach is particularly problematic for any solar facilities that may contract with DESC pursuant to a competitive solicitation program or commercial and industrial program established by the Commission pursuant to Act 62.

#### **5. Rebecca Chilton**

Summary of Testimony: Rebecca Chilton is Principal for Izuba Consulting, a renewable energy development, finance and operations consulting firm. Ms. Chilton's Direct Testimony draws upon her experience in the renewable energy project finance marketplace. Ms. Chilton provides an expert perspective on the commercial reasonableness of certain terms of PPAs between the utility and qualifying small power production facilities as defined in PURPA and Act 62. Ms. Chilton also addresses contentions made in the direct testimony submitted on behalf of DESC as to the relative weight that PURPA and/or Act 62 give to their respective legislative goals to encourage renewable energy and how the balancing of those goals might affect terms provided by the utility in PPAs for small power producer QFs.

Ms. Chilton concludes that both PURPA and Act 62 prioritize protection of the ratepayers with "just and reasonable" rates while simultaneously requiring that state-level regulatory bodies refrain from mandating or approving terms and conditions of PPAs that discriminate against QFs.

Specifically, Ms. Chilton states that Act 62 requires this Commission to promote consumer interests along with the advancement of QFs, the diversification of the utility's generation mix, and the promotion of renewable energy in the state.

Ms. Chilton concludes that Act 62 requires this Commission to approve PPAs which allow QFs to compete on even terms with the utility's other generation resources, both present and projected, and enable the QF to obtain regularly-available, market-rate financing for the costs of developing, building, and operating their projects. Ms. Chilton opines as to the definition of "regularly-available", market-rate financing and, from a lending perspective, what terms are necessary in PPAs to achieve this for QFs. The witness notes that the threshold established in Act 62 is not whether it is possible for a QF to obtain financing under certain special circumstances, rather it is that PPA terms be commercially reasonable and allow QFs to attract regularly-available, market-rate financing. Ms. Chilton also offers a critique of DESC's proposed inputs to derive at their avoided cost projections.

Finally, Ms. Chilton testifies that a longer PPA contract term, accompanied by an appropriately calculated avoided cost-based purchase price, will lead to more mainstream capital availability for QF development. Ms. Chilton notes that Act 62 recommends a ten-year term as a starting point and expressly encourages this Commission to support contracts with terms longer than ten years as a means of promoting renewable energy and reminds the Commission that DESC's previous practice was to regularly sign PPAs with a duration longer than ten years. Ms. Chilton then concludes by recommending that the Commission set the tenor of PPA contracts at a minimum of fifteen (15) years with appropriate conditions as set forth in SC Code Ann. § 58-41-20(F)(1) to facilitate the opportunity to obtain financing for QFs in South Carolina. To best comply with Act 62's goal of promoting renewable energy development in the state, Ms. Chilton

recommends that this Commission direct that DESC's PPAs be offered at fifteen (15) to twenty (20) years, and that some PPAs be approved for twenty (20) years or longer, all with the appropriate statutory conditions.

Respectfully submitted this 30<sup>th</sup> day of September, 2019.

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**BEFORE**  
**THE PUBLIC SERVICE COMMISSION**  
**OF SOUTH CAROLINA**  
**DOCKET NO. 2019-184-E**

IN RE: South Carolina Energy Freedom Act )  
(H.3659) Proceeding to Establish )  
Dominion Energy South Carolina, )  
Incorporated's Standard Offer, Avoided )  
Cost Methodologies, Form Contract )  
Power Purchase Agreements, )  
Commitment to Sell Forms, and Any )  
Other Terms or Conditions Necessary )  
(Includes Small Power Producers as )  
Defined in 16 United States Code 796, as )  
Amended) - S.C. Code Ann. Section 58- )  
41-20(A) )

**CERTIFICATE OF SERVICE**

This is to certify that I have caused to be served this day one copy of **THE JOINT PREHEARING BRIEF FOR SOUTH CAROLINA SOLAR BUSINESS ALLIANCE AND JOHNSON DEVELOPMENT ASSOCIATES** to the persons named below at the addresses set forth via electronic mail:

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/s/ Jeremy C. Hodges

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Columbia, SC  
September 30, 2019